ECHELON

LONTP/D

LONBUILDER TWISTED PAIR TRANSCEIVER

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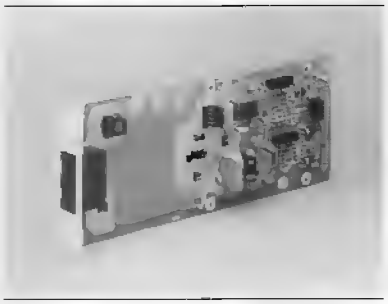

The LONBUILDER™ Twisted-Pair Transceiver is a board-level module that allows development and testing of remote nodes that communicate over twisted-pair media. Two selectable transceivers are on-board: a 1.25 Mbps transceiver for fast response/medium distance applications, and a 78 Kbps transceiver for longer distance/lower traffic applications. Each unit is shipped with a bus segment for quick installation of prototype distributed control networks. A terminator is provided with each unit; one terminator should be installed at each end of the twisted-pair bus.

FEATURES AND BENEFITS

▼ *Two transceivers on board: 1.25 Mbps transceiver for high throughput, fast response networks; 78 Kbps transceiver for long distance, lower throughput applications*	Enables fast prototyping of cost effective and reliable distributed control networks for a variety of applications, including: Industrial Control Building and Home Control Machine Control Medical Systems Avionics
▼ *Collision detection circuit*	Improves response time
▼ *Polarity insensitive link*	Foolproof installation of nodes on the network
▼ *Automatic disconnect of unpowered nodes*	Network is fault tolerant to power failures on individual nodes
▼ *Compatible with all processor boards of the LONBUILDER Developer's Workbench*	Supports development networks with emulators, SBCs, and routers
▼ *Preassembled terminators, and a quick installation bus segment are included*	Facilitates fast installation of prototype distributed control networks
▼ *Two topologies supported: Bus topology and quick-installation*	Provides the developer with a choice between quick installation for prototyping purposes, or evaluation of commercially installed topologies

ECHELON

Part Number 003-0004-01

Echelon Corporation
4015 Miranda Avenue
Palo Alto, CA 94304
Telephone (415) 855-7400
Fax (415) 856-6153

Echelon Europe Ltd
105 Heath Street
London NW3 6SS
England
Telephone (071) 431-1600
Fax (071) 794-0532
International Telephone + 44 71 431-1600
International Fax + 44 71 794-0532

Echelon Japan K.K.
AIOS Gotanda Building #808
10-7, Higashi-Gotanda 1-chome,
Shinagawa-ku, Tokyo 141, Japan
Telephone (03) 3440-8638
Fax (03) 3440-8639

Technical Specifications

Transceiver Type	78 Kbps	1.25 Mbps
Maximum Bus Loading*		
Custom Node Transceiver	64	64
LONBUILDER Transceiver	32	32
Maximum Stub length		
Custom Node Transceiver	3 meters	30 cm
LONBUILDER Transceiver	2.0 meters	5 cm
Maximum Bus Length	1300 meters	300 meters
Cable Description **	22 AWG Unshielded twisted-pair bus	
Cable segment for Quick Installation *** (included)	20 cm cable, with RJ 45 plug on both ends	
Isolation (Data Pair)	1500 V (60 second)	
Power	Locally-powered from emulator, SBC, or router	
Supply Voltage	5 V (+/- 5%)	
Temperature		
Operating	0 to 55°C	
Non Operating	-20 to 65°C	
Humidity (non-condensing)		
Operating	25–95% @ 40°C	
Non Operating	90% @ 60°C	
Dimensions	Board Size: 7.6 cm X 20.3 cm (3″ x 8″ x 0.75″)	
Bus Connector	Dual female modular socket (RJ45)	
Terminators (included)	Required at both ends of the bus	

* In order to achieve maximum performance, the LONWORKS™ twisted-pair transceiver circuit should be laid out according to recommended layout guidelines that minimize parasitic circuit elements between the NEURON® CHIP, the transceiver circuit, and the attached stub segment. Each node that uses a twisted-pair transceiver that follows the recommended layout guidelines counts as one node equivalent. In order to provide added flexibility in a development environment, the LONBUILDER Twisted-Pair Transceiver does not follow the optimized layout guidelines. Therefore, each node that uses a LONBUILDER Twisted-Pair Transceiver counts as two node equivalents. Both type of nodes can be used on the same link as long as the limit of 64 node equivalents is not exceeded. See the LONWORKS Media Primer for more details.

** Echelon will provide information on cable vendors and their qualified products.

*** The quick installation topology uses 24 AWG unshielded twisted pair segments that can be easily plugged into the LONBUILDER Twisted-Pair Transceiver and forms a small, daisy chain topology. For evaluation of prototype networks with a large number of nodes and long distances, the bus topology should be used. See the LONWORKS Media Primer and the LONBUILDER Startup and Hardware Guide for more details.

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